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09/917,383	07/28/2001	Shi-You Ding	NREL01-37	9967

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EXAMINER

PATTERSON, CHARLES L JR

ART UNIT

PAPER NUMBER

1652

DATE MAILED: 10/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/917,383

Applicant(s)

DING ET AL.

Examiner

Charles L. Patterson, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24,27-35,43,44,48-54 and 58-75 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24,27-35,43,44,48-54 and 58-75 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/13/04 has been entered.

The disclosure is objected to because of the following informalities:

Figure 2 is objected to because it is not a good copy and the words especially are unclear. This objection is repeated from the previous action.

37 CFR 1.121(d) states:

(d) Drawings. One or more application drawings shall be amended in the following manner: Any changes to an application drawing must be in compliance with § 1.84 and must be submitted on a replacement sheet of drawings which shall be an attachment to the amendment document and, in the header, labeled "Replacement Sheet." Any replacement sheet of drawings shall include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is amended. All changes to the drawing(s) shall be explained, in detail, in either the drawing amendment or remarks section of the amendment paper.

(1) A marked-up copy of any amended drawing figure, including annotations indicating the changes made, may be included. The marked-up copy must be clearly labeled as "Annotated Marked-up Drawings" and must be presented in the amendment or remarks section that explains the change to the drawings.

(2) A marked-up copy of any amended drawing figure, including annotations indicating the changes made, must be provided when required by the examiner.

Applicants have submitted another Fig. 2 but it has not been labeled "Replacement Sheet" in the header as required by 36 CFR 1.121(d) and thus it will not be included in any patent issuing from this application.

Appropriate correction is required.

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Applicants have submitted another written sequence disclosure but have not submitted a new CRF. Applicants state that they have submitted another CRF but none is of record in the patent office. The last CRF submitted by applicants was 9/23/02. The errors noted in the previous action are still present in the CRF that is of record in the application. In order to correct the error, applicants must submit another CRF. It is noted that the Request For Continued Examination submitted with this amendment lists a "Sequence Listing", which was submitted, but not a CRF.

The examiner has re-read all of the instant specification in view of the instant amendment and remarks and has determined that the following rejections should be made.

Claims 14 and 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 14 is indefinite in the recitation of "polypeptide of claim 1". There is no antecedent basis in claim 1 for "polypeptide".

Claim 34 is indefinite in the recitation of "the agent". Claim 29 contains no antecedent basis for this term.

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-24, 27-35, 43, 44, 48-54 and 58-75 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-11, 26, 27, 36-43, 44, 45 and 69-74 of copending Application No. 09/917,384. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented. This rejection is repeated for the reasons given in the last action. Applicants arguments have been carefully considered but do not overcome the instant rejection.

Applicants state that they "have reviewed both sets of sequence listings and find them to be completely different...[and that possibly] the issue raised by the examiner has resulted in a clerical error". They further state that they "are resubmitting a substitute sequence listing for each of the applications to cure the problem". The examiner has examined 09/917,384 and there has been no submission of a new CRF since 11/27/02. It is noted that the written sequence disclosure filed 11/27/02 has 1121 amino acid residues in SEQ ID NO:1 but the CRF apparently filed the same time has 1228, with the sequence being identical with SEQ ID NO:1 of this application. As noted *supra*, in this application the last submission of a CRF was 9/23/02. Therefore the sequences of record are still identical and the rejection is maintained.

Claims 12-13 are rejected under 35 U.S.C. 101 because they are non-statutory. The instant claims read on the nucleotide sequence and protein sequence as found in nature. U.S. patent practice requires that patent claims

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indicate some intervention of "the hand of man". Adding "isolated" or some similar term to the instant claims would overcome this rejection.

Claims 1-11, 14-24, 27-35, 43-44, 48-54 and 63-75 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific substantial asserted utility or a well established utility.

The instant claims are directed to a "composition comprising a thermostable GuxA peptide heterologously expressed in an organism other the *Acidothermus cellulolyticus*", a composition comprising an amino acid sequence at least 90% identical with SEQ ID NO:1, 4, 5, 7 or 8 or encoded by a sequence at least 90% identical with SEQ ID NO:2, an isolated polypeptide comprising SEQ ID NO:1, 4, 5, 7, 8 or "an amino acid sequence have at least 70% sequence identity with" these sequences, a method for producing Gux A by using host cells containing the gene, a method for hydrolyzing cellulose by using the protein and "a GuxA-derived peptide...comprising at least one catalytic domain selected from GH6 and GH12 domains and, at least one carbohydrate binding domain selected from CBD type II and CBD type III domains". Applicants have cloned a GuxA gene that has some homology to a cellulase. Applicants do not disclose the testing of the polypeptide to ascertain if it has enzymatic activity nor combining other GH6, GH12, CBDII and CBDIID domains to obtain a protein with enzymatic activity. There is no requirement in the instant claims that the protein expressed in some other organism have cellulase activity. There is no teaching that a polypeptide comprising SEQ ID NO:4, 5, 7 or 8 or having 70% identity to these sequences or SEQ ID NO:1 will have activity. Tables 3 and 4 show that the GH6 and GH12 regions of SEQ ID NO:1 have some homology with the corresponding regions in two proteins, but do not disclose that SEQ ID NO:1 has cellulase activity. The "Gux-derived" peptide

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of claims 68-75 reads on a peptide having a GH6 and GH12 from any other source whatsoever and "at least one" CBDII or CBDIII from any source whatsoever.

It is maintained, absent convincing proof to the contrary, that since there is similarity of SEQ ID NO:1 with other known cellulases, claims limited to this sequence, to "GuxA" or to peptides expressed in other organisms or peptides having 95% identity with this sequence and having cellulase activity will be allowed. Otherwise it is maintained that applicants have not disclosed any specific substantial asserted utility for the instant claims.

Claims 1-11, 14-24, 27-35, 43-44, 48-54 and 63-75 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Claims 16-21, 27-28, 35, 43-44, 48-54, 63-67, 69-75 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The instant claims are drawn to GuxA peptides with amino acid sequences having at least 90% identity with SEQ ID NO:1, 4, 5, 7 or 8 or encoded by a sequence having at least 90% identity with SEQ ID NO:2, a polypeptide having at least 70% identity with SEQ ID NO:1, 4, 5, 7 or 8 or a composition comprising a "GuxA derived peptide" comprising a peptide having a GH6 and GH12

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from any other source whatsoever and "at least one" CBDII or CBDIII from any source whatsoever. This covers a wide spectrum of embodiments and the specification does not teach one of ordinary skill in the art to obtain peptide within the scope of the instant claims. It only teaches this ordinary artisan how to obtain GuxA or SEQ ID NO:1.

The previous art rejections have been dropped in view of applicants arguments and a careful review of the cited references. Although apparently the theoretical molecular weight of 124,597 is not taught in the instant specification, it is now included in a 37 CFR § 132 declaration by William S. Adney and thus is taken to be true.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles L. Patterson, Jr., PhD, whose telephone number is 571-272-0936. The examiner can normally be reached on Monday - Friday from 7:30 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapura Achutamurthy, can be reached on 571-272-0928. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the



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Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Charles L. Patterson, Jr.  
Primary Examiner  
Art Unit 1652

Patterson  
October 12, 2004